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## DISCOVERY OF *Aedes (Howardina) bahamensis* IN THE UNITED STATES

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In 1986, the Centers for Disease Control, Division of Vector-Borne Viral Diseases (DVBVD), Fort Collins, Colorado, initiated a surveillance program for the detection of *Aedes albopictus* (Skuse) with 40 collaborating cities in the southern and southeastern United States. Fifteen ovitraps, similar to those described by Fay and Eliason (1966), were deployed in each city, and egg paddles within the traps were changed weekly. These ovitraps were 1-pint black plastic jars with red velour strips clipped inside as oviposition paddles, however, no ethyl acetate was used. Paddles were mailed to the DVBVD, where the eggs were hatched, and the resulting larvae were reared to 3rd or 4th instar. *Aedes aegypti* (Linn.), *Ae. albopictus* and *Ae. triseriatus* (Say) were identified regularly from reared larvae. In October 1986, a different species, *Aedes (Howardina) bahamensis* Berlin, was found in ovitraps from Dade and Broward counties in south Florida. Identification of *Ae. bahamensis* was confirmed by specialists at the Walter Reed Biosystematics Unit, Smithsonian Institution, Washington, DC., where specimens were deposited. This confirmation represents the first time this species and the subgenus *Howardina* of *Aedes* has been recorded in the United States.

Originally discovered in the Bahamas by Spielman and Weyer (1965) as *Ae. albonotatus* (Coquillett) and subsequently described as *Ae. bahamensis* by Berlin (1969), this mosquito has become established in at least 2 counties of southern Florida. Results from the 1986 and 1987 surveillance programs suggest that *Ae. bahamensis* is expanding its range. *Aedes bahamensis* was identified at one site in Dade County in 1986 and at 2 sites in 1987. In Broward County, 7 sites were positive in 1986 and 10 sites in 1987. The Dade County sites are located at an old tire yard near an apartment complex,

where no recent tire importations were recorded. The first Broward County site to yield *Ae. bahamensis* was in an unpopulated tidal flow area with few trees and a pile of old tires in the middle of a field. Later, positive sites in Broward County included old and new tires in both industrial and residential environments.

The public health significance of *Ae. bahamensis* has not been investigated. Under insectary conditions at the DVBVD, *Ae. bahamensis* was found to be autogenous, although, like many other autogenous mosquito species, it will feed on blood when given the opportunity. After colonization, the proportion of females feeding on blood has increased with each generation, suggesting a selection for females with a blood feeding preference. Since *Ae. bahamensis* will feed on blood, this species can potentially serve as an arbovirus vector. Llewellyn et al. (1970) addressed this question for chikungunya and dengue-2 viruses, comparing *Ae. aegypti* and *Ae. albonotatus* (renamed *Ae. bahamensis*). They concluded that *Ae. bahamensis* is an unlikely vector of either virus. Whether this species can vector other arboviruses depends on its intrinsic viral susceptibility, the willingness of nulliparous females to readily feed on blood, and host preferences.

The mode of introduction of this species to Florida is open to speculation. Larvae may have been introduced in water-holding containers, such as old tires used as bumper guards on boats, or through used tire importations, aircraft or hurricane winds. Nevertheless, this species seems to be here to stay. Southern Florida has reported increasing populations signalling the need for more research into the significance of *Ae. bahamensis* in the United States.

### REFERENCES CITED

- Berlin, O. G. W. 1969. Mosquito studies (Diptera, Culicidae) XII. A revision of the neotropical subgenus *Howardina* of *Aedes*. Contrib. Am. Entomol. Inst. (Ann Arbor) 4(2):1-190.
- Fay, R. A. and D. A. Eliason. 1966. A preferred oviposition site as a surveillance method for *Aedes aegypti*. Mosq. News 26:531-535.
- Llewellyn, C. H., A. Spielman and T. E. Frothingham. 1970. Survival of arboviruses in *Aedes albonotatus*, a peridomestic Bahaman mosquito. Proc. Soc. Exp. Biol. Med. 133:551-554.
- Spielman, A. and A. E. Weyer. 1965. Description of *Aedes (Howardina) albonotatus* (Coquillett), a common domestic mosquito from the Bahamas. Mosq. News 25:339-343.
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